



Title: Plant Glutamine Amidotransferase
Homologs
Applicant: Stephen Allen et al.
Application No. 09/831233
Atty: J. K. Joung 302-992-4942

FIGURE 1A

SEQ ID NO:15 MEATAAPFSSI--VSSRQNFSSSSIRASSPASLFLSQKSIGNVNRKFKSPRSLSVRASS
SEQ ID NO:02 HEKELAS-----TKPQNGFRIRAA1-----AGA
SEQ ID NO:04 MQPPLQAQGANVAA1LTVPCSAARRPKRSNQ-----PRGCGSVSV-----SVSVRASS
SEQ ID NO:08 -----
SEQ ID NO:06 -----
SEQ ID NO:10 MVAA-----TSINAVPCSAGR-PKRRSQ-----RRG-----AS-----TVAVRASG
SEQ ID NO:12 -----
SEQ ID NO:14 -----
1 60
SEQ ID NO:15 TSDSVVTLDDYGAGNVRNIRNALRHLGFSIKDVQTPGDILNADRLIFPGVGPFAPAMDVL
SEQ ID NO:02 GGDSVVTLDDYGAGNVRNIRNARTLGFDIKDVQKPEDILNAKRLIFPGVGAFAPAMDVL
SEQ ID NO:04 GANTV-TLLDYGAGNVRNIRYLGFDIRDVQSPEDIVXAEVVFPGVGAFGSAMDVX
SEQ ID NO:08 -----
SEQ ID NO:06 -----
SEQ ID NO:10 DASTV-TLLDYGAGNVRNIRHLGFGIRDVRSPEXILAADRLVFPG-----V
SEQ ID NO:12 -----VTLLDYGAGNVRNIRFLGFDIKDVQTPQDILNASRLVFPVGGAFAAAAMEVL
SEQ ID NO:14 -----
61 120
SEQ ID NO:15 NRTGMAEALCKYIENDRPF LGICLGLQLLFD-S SEQNGPVKGLGVIPIGVGRFDASAGIR
SEQ ID NO:02 IRKGLAEALCTYIQNDRPF LGICLGLQLLFE-S SEENGPIQGLGLIPGRVGRFESSNGLR
SEQ ID NO:04 TRTGMXNALREYIQRRPF XG-----
SEQ ID NO:08 -----YPRGTGPF LGICLGLQLLFGFQ
SEQ ID NO:06 -----
SEQ ID NO:10 -----G-----AF-----
SEQ ID NO:12 SKT-----
SEQ ID NO:14 -----
121 180

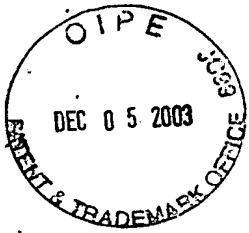


FIGURE 1B

SEQ ID NO:15	VPHIGWNALQVGKDSEILDDVGNRHHVYFVHSYRAIPSDENKDWISSTCNYESFISSIRR	
SEQ ID NO:02	VPHIGWHALDIKEGSAILDDVGNQHVVYFVHSYRA-NAEDNKEWISSTCSYGDDFIASIQK	
SEQ ID NO:04	-----	
SEQ ID NO:08	VPHVGWNALQXTXXXPLLQGADGXVYFXHSYRVLAS	
SEQ ID NO:06	-----	
SEQ ID NO:10	-----	
SEQ ID NO:12	-----	
SEQ ID NO:14	-----	
	181	240
SEQ ID NO:15	GN VHAVQFHPE	KSGEVGLSVLRRFLHPKL--PATQKPMEGKASKLAKRVIACLDVRTNDK
SEQ ID NO:02	GN VHAVQFHPE	KSGGVGLSILRRFLNADSFNNKRQKPMNGKASKLAKRVIACLDVRANDN
SEQ ID NO:04	-----	-----
SEQ ID NO:08	-----	-----
SEQ ID NO:06	-----	-----
SEQ ID NO:10	-----	-----
SEQ ID NO:12	-----	-----
SEQ ID NO:14	-----	-----
	241	300
SEQ ID NO:15	GDLVVTKGQDYDVREQSNENEVRNLGKPVDLAQYKDGADDEISFLNITGFRDFPLGDLF	
SEQ ID NO:02	GDLVVTKGQDYDVRETERTEENEVRNLGKPVDELAQYLDGADDEVSVFLNITGFRDFPLGDLF	
SEQ ID NO:04	-----	-----
SEQ ID NO:08	-----	-----
SEQ ID NO:06	--LVVTKGQDYDVRDHTSSKEVRNLGKPVDLASQYYIDGADDEVSVFLNITGFRDFPLGDLF	
SEQ ID NO:10	-----	-----
SEQ ID NO:12	-----	-----
SEQ ID NO:14	-----	-----
	301	360



FIGURE 1C

SEQ ID NO:15	MIQVLRQTSKNV FVPLTVGGGIRDFTDASGRYYSSLEVAAEYFRSGA	MSIG	MSIG	DAVFAA
SEQ ID NO:02	MLQVLQRASENV FVPLTVGGGIRDFTDANGRIYSSLEVA SEYFRSGA	VSIG	VSIG	DAVYTA
SEQ ID NO:04	---	---	---	---
SEQ ID NO:08	---	---	---	---
SEQ ID NO:06	MLEVLRCASEKVFVPLTVGGGIRDFTDANGRIYSSLEVA SEYFRSGA	ISIG	ISIG	DAVYAA
SEQ ID NO:10	---	---	---	---
SEQ ID NO:12	---	---	---	---
SEQ ID NO:14	---	---	---	---
	361			420
SEQ ID NO:15	EEFIKSGVKTGKSSLEQISR VYGNQAVVSI	PRRVYVNHPPDDVPYKVIRVTNPGPNGEE		
SEQ ID NO:02	EEYIKTGVTGKSSIEQISTVYGNQAVVSI	PRRVYLRKPDEVEFEKAIKVSHPGPNGEE		
SEQ ID NO:04	---	---		
SEQ ID NO:08	---	---		
SEQ ID NO:06	EAFLOTGVKTGKSSLEQISR VYGNQAVVSI	PRRVYVKSQEDVPFKTVKVSTKGPSGEE		
SEQ ID NO:10	---	---		
SEQ ID NO:12	---	---		
SEQ ID NO:14	---	YVKDPNDVQLKTIRVSSPGSNGEE		
	421			480
SEQ ID NO:15	YAWYQCTVSGQGGRPIGAFELAKAVEELGAG	ILLNCINC	GQKGFDIDLVLKLI SDSV	
SEQ ID NO:02	YAWYQCTVNGGREGRP I GAYELAKAVEELGAG	ILLNCIDC	GQKGFDIDLKLI SDSAV	
SEQ ID NO:04	---	---	---	
SEQ ID NO:08	---	---	---	
SEQ ID NO:06	YAWYQCTVNGGRDSRAI GAYELAKAVEELGAG	ILLNCIDC	GQCGFDIDLVKMVS DAV	
SEQ ID NO:10	---	---	---	
SEQ ID NO:12	---	---	---	
SEQ ID NO:14	YAWYQCTVNGGREGRP I GAYELAKAVEELGAG	ILLNCIDC	GQKGFDVDLKLISNAV	
	481			540



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FIGURE 1D

SEQ ID NO:15	GIPVIASSGAGTPDHFSEVFEEEDKRICRACCRHPPPERGYQSQSVKEHLQEERIEVRI	598
SEQ ID NO:02	NIPVIASSGAGVADHFSEVFNETNASAAALAAAGIFHR-KEVPIKAVKEHLLKEGIEVRL	
SEQ ID NO:04	-----	
SEQ ID NO:08	-----	
SEQ ID NO:06	TIPVIASSGAGAVQHFSEIFEKTNASAAALAAAGIFHR-KEVPILAVKEHLVNAGVEVRV	
SEQ ID NO:10	-----	
SEQ ID NO:12	-----	
SEQ ID NO:14	SIPVIASXGAGAPEHFSEVFYKTNASAAALAAAGIFHR-KEVPIQSVKEHLLKEGIEVRI	541